STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Virginia W. Diehl,	:	
vs.	:	**01-0453**
The Peoples Gas Light and Coke Company	:	
	:	
Complaint as to alleged tapping of services	:	
and incorrect billing of current services in	:	
Chicago, Illinois.	:	

ADMINISTRATIVE LAW JUDGE'S PROPOSED ORDER

By the Commission:

I. PROCEDURAL HISTORY

On June 14, 2001, Complainant, Virginia W. Diehl, filed a verified formal Complaint ("Complaint") with the Illinois Commerce Commission ("Commission") alleging, *inter alia*, that she had been improperly billed for unmetered gas usage by the Respondent, The Peoples Gas, Light and Coke Company ("Peoples"), at her residence at 650 North Central Avenue, in Chicago, Illinois ("Premises").

Pursuant to proper legal notice, hearings were held before a duly authorized Administrative Law Judge ("ALJ") at the offices of the Commission in Chicago, Illinois on July 26, 2001, August 16, 2001, November 9, 2001, December 14, 2001, January 24, 2002, February 26, 2002 and May 6, 2002.

Peoples appeared at all of the aforementioned hearings through its legal counsel. Ms. Diehl did not appear at the July 26, 2001 hearing. During the August 16 and November 9, 2001 hearings, Ms. Diehl appeared and was assisted by her husband, Sulaiman Asim, who is also a resident at the Premises. Mr. Asim is not an attorney.

At the outset of the November 9, 2001 hearing, the ALJ advised Ms. Diehl and Mr. Asim that the hearing could be continued so that Complainant could secure the services of an attorney. Ms. Diehl and Mr. Asim stated that they understood the ALJ's offer but elected to proceed without an attorney's assistance. Nonetheless, after both parties presented oral and documentary evidence and conducted cross-examination, Complainant requested legal counsel. Accordingly, this matter was continued and Complainant had the assistance of counsel during subsequent hearings and in the preparation of written briefs.

At the November 9, 2001 hearing, Complainant presented testimony and documentary evidence by Mr. Asim, and Peoples presented testimony and documentary evidence by Mario Alday and Joseph Bulanda. On May 6, 2002, Complainant presented testimony by Donald Sadowski and Peoples presented testimony and documentary evidence by Alfredo Ulanday.

At the conclusion of the evidentiary hearings on May 6, 2002, the record was marked "heard and taken."

Peoples filed an Initial Brief on July 15, 2002. Complainant filed an Initial Brief on July 22, 2002 (seven days after the due date for such filings). Peoples filed a Reply Brief on August 22, 2002 and Complainant filed a Reply Brief on August 26, 2002 (four days after the due date).

An ALJ's Proposed Order was served on the parties on February ___, 2003.

II. ANALYSIS

A. Identities and Positions of the Parties

Ms. Diehl and Mr. Asim have resided at the Premises since 1981. Tr. 64. Peoples is a public utility certified by this Commission to provide natural gas within the City of Chicago. Ms. Diehl was Peoples' customer of record at all times pertinent to this Complaint. Peoples' Ex. 4.

Complainant asserts that Peoples is wrongfully billing her for an amount in excess of $15,000, for gas purportedly consumed, but not metered, due to tampering with gas service equipment at the Premises over several years. Plaintiff contends that no such tampering occurred, that if tampering did occur, it is ascribable to some other person or entity, including Peoples, and that, in any event, Peoples has not correctly or reasonably measured the un-metered gas purportedly consumed at the Premises.

Peoples avers that Complainant, or someone acting for Complainant's benefit, has tampered with Peoples' gas service equipment at the Premises, that irrespective of who performed the tampering, Complainant has benefited from the consumption of un-metered gas diverted by tampering, and that Peoples has reasonably measured the diverted gas and billed in accordance with that measurement. The amount Peoples actually seeks to collect for unmetered fuel is $13, 917.11. Peoples Ex. 3, p. 1.

B. Issues Presented and Burden of Proof

In complaint proceedings before this Commission, the complaining party typically bears the burden of proving claims by a preponderance of the evidence presented. However, pursuant to 83 Ill. Adm. Code 280.100(c)(2): "If a utility alleges that tampering has occurred, the utility shall have the burden of proving, by a preponderance of the evidence, that the customer's meter has been tampered with, that the customer has

benefitted from the tampering and that the utility's rebilling is reasonable." Although subsection 280.100(c)(2) explicitly mentions meters and nothing else, subsection 280.100(c)(1) addresses "wires, pipes, meters or other service equipment," and the Commission believes that the burden of proof is assigned to the utility when tampering with any of the equipment described in subsection 280.100(c)(1) is at issue. Therefore, because Complainant's bills include amounts representing gas usage resulting from alleged tampering, Peoples carries the burden of proving tampering, customer benefit and reasonable billing. The Commission will address each of these elements in turn.

C. Did Tampering Occur at the Premises?

Peoples maintains that the testimony of Mr. Alday, photographic evidence and Peoples' billing records establish that tampering took place at the Premises. Additionally, Peoples argues that certain elements of Complainant's own case suggest that tampering occurred.

1. Alday testimony

Mario Alday states that he has been a field service supervisor for Peoples since 1984 and a "Number 8 Man[1]" for two years. Tr. 71. On March 15, 2001, he visited the Premises to investigate why Complainant had received several estimated readings. *Id*. There, he observed a length of pipe that he believed allowed gas to divert around Peoples' gas meter to serve Complainant's appliances. *Id*., 76-78. The pipe connected to Peoples' service pipe before the meter and to Complainant's house piping after the meter, thereby benefiting Complainant with free gas. *Id*. According to Mr. Alday, there were pipe unions on the "inlet" side of the meter that Peoples does not use in the installation of meters like Complainant's. *Id*., 76 & 81.

Mr. Alday states that he brought a camera to the Premises because he is required to photograph any open laundry valves that may be associated with a customer's service complaint. *Id*., 79. He photographed the subject pipe in place, *id*., 74-5, and prepared a report of his findings[2]. *Id*. 73-4.

The pipe was removed by Mr. Murray, another Peoples' service employee, *id*., 193-4; Complainant's Ex. 9 (Mr. Murray's report). A key-locked protective plug was then installed where the pipe had connected to Peoples' service pipe. *Id*., 102 & 194; Complainant's Ex. 9. Mr. Alday, a non-union employee, states that he was not allowed to remove the purported diversion pipe himself because that task had to be performed by a union member. *Id*., 92.

Complainant responds, first, that there is insufficient proof that the pipe described by Mr. Alday was in fact in place at the Premises. Complainant's Init. Brief at 9. Second, Complainant argues that even if such pipe had been present at the Premises,

[1] Within Peoples' organizational structure, a "Number 8" employee investigates customer complaints in the field. Tr. 42.
[2] The report and the photograph comprise Respondent's Ex. 1.

Peoples has failed to demonstrate that the pipe was capable of diverting gas away from Peoples' meter. *Id*. at 6 & 8. Third, Complainant contends that Peoples did not establish through a proper chain of custody that the pipe presented to the Commission during the evidentiary hearings in this matter was the diversion pipe purportedly removed from the Premises. *Id*. at 7.

Regarding whether the pipe described by Mr. Alday was actually in place at the site, Complainant questions why Peoples personnel had not observed it during prior visits to the Premises when the pipe was allegedly present. Complainant emphasizes that there is no evidence that the site of the pipe was hidden from view. *Id*. at 9. While this argument could undermine Peoples' estimate of the *duration* of the purported diversion, it does not refute Mr. Alday's testimony, confirmed by Mr. Murray's report, that a pipe was in place on March 15, 2001, that it was observed and removed by Mr. Murray, Tr. 190, and that the opening created by removal was plugged by Mr. Murray on that date. Complainant's Ex. 9. The Commission does not doubt Mr. Alday's veracity on this point, and we note that his testimony is entirely consistent with the report he entered into Peoples' records on March 15, 2001, and with Mr. Murray's report of the same date. Respondent's Ex. 1; Complainant's Ex. 9.

With respect to whether the pipe could divert gas, Complainant argues that there is insufficient record evidence of Mr. Alday's qualification to make such a determination. "No testimony was presented to show that Alday knows what a diversion looks like, how many diversions he has investigated in the past, or what his job as field service supervisor in the service department entails." Complainant's Init. Brief at 8. Consequently, Complainant avers, Mr. Alday is unqualified to "make the legal conclusion that he made." *Id*.

Peoples replies that Complainant ignores Mr. Alday's considerable field experience and exaggerates the complexity of identifying a diversion. Peoples Reply Brief at 5. The Commission concurs with Peoples on the former point. At the time he testified in this proceeding, Mr. Alday had been a service supervisor for 17 years. Our experience with the regulation of gas providers informs us that a field supervisor with that length of service has encountered tampering and diversions with sufficient frequency to make the determination involved here. Tampering with utility equipment is, unfortunately, not a rare occurrence. That is why we have promulgated administrative regulations addressing such matters, and why Peoples has created internal organizations to minimize the associated revenue losses[3]. Moreover, contrary to Complainant's assertion, Mr. Alday expressly testifies that he, in fact, had prior experience in tampering investigations as a Peoples service employee. Tr. 100.

We also agree with Peoples that gas diversions, at least typically, require no more investigative experience than Mr. Alday's. As Complainant's own witness, Mr. Sadowski, describes it, the particular diversion alleged (and photographed) here simply moved gas from "Point A" to "Point B," *id*., 249 & 266, over a span of less than a foot. *Id*., 282. It is true that Mr. Sadowski characterizes the piping above Complainant's

[3] For example, Mr. Alday refers to Peoples "Revenue Protection Unit" at Tr. 102.

meter as "scrambled." Nonetheless, even if persons without specialized expertise would have failed to recognize the diversion, we find that Mr. Alday had sufficient specialized expertise for this purpose.

Moreover, Mr. Alday's description of what he observed ("a diversion of the unmetered gas from the unmetered portion of the pipe to the customer's house piping") *id*., 74, is not, as Complainant argues, a "legal conclusion." It is the observation of an eyewitness and employee of Respondent.

In another challenge to Peoples' claim that the subject pipe could divert gas, Complainant also stresses that Mr. Alday did not testify that he inspected the pipe after its removal. Complainant's Init. Brief at 6. Therefore, Complainant avers, he could not and did not determine that it was "serviceable" (i.e., not rusted through, plugged, cracked or capped). *Id*. at 6 & 8. The Commission does not conclude, however, that Mr. Alday had to inspect the pipe after removal to determine that it was not rusted through or cracked, since those conditions would have been visible to him while the pipe was in place. Moreover, gas would have spilled into Complainant's basement, visible to all. As for plugging or capping, Mr. Murray chose to lock and cap the entry points at which the removed pipe had connected to, respectively, Peoples' distribution line and Complainant's house line (as shown in Complainant's Ex. 16), which evidences his observation that diverted gas had been flowing through the subject pipe. Additionally, we note that the pipe was made available to Complainant and her expert during the May 6, 2002 hearing in this proceeding[4], Tr. 244-45, and they did not claim then that it was plugged or capped.

With regard to Complainant's concern about the chain of custody for the subject pipe, the Commission observes that Mr. Alday's testimony stands on its own and is not dependent upon the authenticity of the pipe brought to the May 6, 2002 hearing. Rather, Peoples relied upon Mr. Alday's direct observations at the Premises, as reflected in his testimony and documentary evidence, and upon Mr. Alday's photograph of the pipe (discussed below). Accordingly, even if we assume, solely for the sake of argument, that the pipe displayed at hearing was not the subject pipe, Mr. Alday's testimony and photograph have their own evidentiary validity and weight. Moreover, the pipe was never offered for, or placed in, the evidentiary record, so no authentication was required.

Furthermore, we reject Complainant's assertion that the chain of custody requirement in criminal prosecutions is applicable to complaint proceedings before this Commission. Complainant's Init. Brief at 7; Complainant's Reply Brief at 2. This is not a criminal case initiated by the state, in which a party's liberty is at stake or in which a fine can be levied. Indeed, Complainant initiated this case, to obtain relief from a private debt to a regulated business. If any chain of custody requirement applies here, it is, at most, the requirement used in civil litigation. 83 Ill.Adm.Code 200.610(b) ("In contested cases, and licensing proceedings, the rules of evidence and privilege applied

[4] The subject pipe was identified as Complainant's Ex. 17 for Identification, Tr. 247, but neither party requested its admission to the record.

in *civil* cases in the circuit courts of the State of Illinois shall be followed." (Emphasis added.)) That requirement is less stringent than the requirement in criminal proceedings. Woolley v. Hafner's Wagon Wheel, Inc., 22 Ill.2d 413, 176 N.E.2d 757 (1961). Moreover, proof of the chain of custody is only one way that the authenticity of evidence can be established. Authenticity can also be established, for example, by a witness with personal knowledge. Handbook of Illinois Evidence, Sec. 901.2.

2. Photographic evidence

Mr. Alday's photograph shows a pipe in place at the Premises that would enable gas to flow into Complainant's house piping without passing through Peoples' meter. Respondent's Ex. 1. The pipe is rusted and, in Mr. Alday's opinion, had been in place "awhile." Tr. 81 & 195-196. Complainant's own photograph, taken several months later, depicts the same apparatus, minus the purported diversion pipe removed by Peoples. Complainant's Ex. 16. The protective plugs installed by Peoples at the former entry points of the purported diversion pipe are visible in Complainant's photograph. Complainant expressly denies asserting that Peoples' photograph is "a fake." Complainant's Reply Brief at 2.

3. Peoples' billing records

Through Joseph Bulanda, a Peoples customer service representative, Peoples presented oral testimony and documentary evidence concerning changes in Complainant's gas consumption, which purportedly show that tampering has occurred at the Premises. Mr. Bulanda has been a Peoples employee since 1967 and performs investigations and billing calculations for customer accounts allegedly involving unmetered gas, including diverted gas. Tr. 108-09. He estimates that he has completed 5000 such (unmetered gas) investigations and bill calculations. *Id*. 109.

According to Mr. Bulanda, Peoples' calculations show that the amount of gas used at the Premises "drastically dropped down" in late 1992, in a manner consistent with the diversion of gas away from Complainant's meter. *Id*., 113; Respondents Ex 2. He explains that drastic reductions are identified by analyzing historical consumption to establish a norm, then looking for significant declines from that norm. Tr. 115-116. Peoples uses a degree-day ("DD") analysis of fuel consumption, Tr. 116, in order to account for weather differences affecting the usage periods under comparison[5]. According to Mr. Bulanda, the dramatic reduction in billed gas usage at the Premises extended from November 20, 1992 until March 15, 2001, when the alleged diversion was removed[6]. *Id*., 120 & 146-148. Consequently, Peoples concludes that diversion occurred throughout that time period.

[5] The degree-day is a unit of measurement that reflects the effect of cold weather on fuel usage for premises heating.

[6] For example, billed heating gas usage dropped from .484 MRD/DD prior to November 20, 1992, (Peoples Ex. 3, p. 1) to .066/MRD/DD in the period from November 21, 1992 to December 4, 1993. Tr. 146-147; Respondent's Ex. 2. ("MRD" = meter reading difference. Tr. 117. As the name implies, MRD quantifies the movement of fuel through the customer's meter during a given time period.)

Complainant presents alternative explanations for the decline in usage. Mr. Asim testifies that, beginning in mid-1993, he and Ms. Diehl were home less often, because he began working two jobs and she left the house so that she would not be alone. Tr. 26. Complainant also contends that, from 1982 forward, several energy conserving improvements were made to the Premises. Complaint at 2, para. 6 & attachment. Mr. Sadowski, Complainant's witness, states that he observed a replacement boiler at the Premises in January 2002, Tr. 261, that he believed was installed in September 1999. *Id*., 254.

Even if we take them at face value, Complainant's alternative explanations would, at most, only partially explain the severe reduction in metered fuel consumption at the Premises[7]. Complainant's and Mr. Asim's additional absences from the Premises began several months *after* metered consumption had already dropped so substantially. The boiler was replaced many years later. Furthermore, there is no specific or supporting evidence pertaining to energy conservation measures at the Premises, other than window replacements made *ten years before* the purported diversion. Complaint (attachment).

Nonetheless, the diminution of Complainant's metered fuel does not, *by itself*, conclusively establish that a diversion occurred. A precipitous drop in metered usage is certainly consistent with diversion, but it is not necessarily or exclusively a result of diversion unless other evidence shows that it is. However, the fact that the reduced usage continued over a period of several years does suggest that the reduced usage was associated with a non-temporary condition, which could be – but was not necessarily - a piping diversion.

4. Conclusion

The Commission finds that tampering, in the form of a diversion of gas away from Complainant's gas meter and into her house piping, occurred at the Premises. Mr. Alday's testimony, photograph and report, and Mr. Murray's report, establish that the subject pipe was in place on March 15, 2001 and constituted such diversion. The gas consumption history at the Premises, as derived from Peoples' records, is consistent with a diversion and, when correlated with the other evidence described here, adds weight to our conclusion that diversion occurred.

D. Did the Tampering at the Premises Benefit Complainant?

Since the subject pipe diverted gas away from Complainant's usage meter and into the areas of the Premises where Complainant's appliances consume gas, it follows that Complainant has derived benefit from tampering. Simply put, as a result of the

[7] As Peoples states, "[a] house must still be heated in the winter or the water pipes will freeze. A house must still be warmed to a comfortable temperature when a person comes home from work. The water heater will still be using gas to keep the water in the tank hot. And, meals must still be cooked in the oven and laundry must still be dried in the clothes dryer." Peoples Init. Brief at 19.

diversion, Complainant received and consumed fuel at the Premises without paying for it. The Commission will address the magnitude and duration of that benefit in the next section of this Order.

Our regulations do not require proof that Complainant is responsible for the tampering and, indeed, Peoples does not attempt to prove that she is. Instead, the sole issue, under 83 Ill. Adm. Code § 280.100(c)(2), is whether Complainant benefited from the tampering, irrespective of any responsibility she may bear for it. Accordingly, the Commission makes no finding that Complainant caused the tampering proven here.

E. Is Peoples' Rebilling for Diverted Gas Reasonable?

The reasonableness of Peoples' billing is dependent upon whether those bills satisfactorily reflect the magnitude and duration of proven tampering, as well as the revenue loss caused thereby. Three issues arise: 1) how much gas was diverted away from Complainant's meter and into the Premises; 2) over what time period did such diversion take place; and 3) what charges would Peoples have collected for the unmetered gas.

1. Magnitude of diversion

Because the diversion of gas at the Premises did not stop the flow of gas through Complainant's meter, some quantify of gas continued to be measured by the meter, while some other quantity went directly into Complainant's house piping without measurement. By its very nature as unmetered gas, the latter quantity cannot be precisely determined after the fact. The question, then, is whether Peoples has fairly and reasonably estimated that quantity. Peoples presents two estimation methods – a comparison of Complainant's billed usage before and during the alleged diversion period, and an analysis of the results of a physical experiment designed to replicate the diversion. Peoples asserts that these methods produced consistent results here. Peoples Init. Brief at 17-18.

a.) billing comparisons

In its billing comparisons, Peoples determined Complainant's pre-diversion, or "normal," usage by quantifying fuel consumption at the Premises between November 23, 1988 and September 22, 1989. Peoples' Ex. 3, p. 1. Mr. Bulanda states that Peoples performed actual meter readings on these two dates. Tr. 120. During the period between those dates, Complainant registered an MRD/DD of .484. Peoples' Ex. 3, p. 1.

Peoples then compared Complainant's gas usage during the foregoing base period with subsequent usage and concluded that, as already mentioned above, Complainant's gas usage dropped dramatically, according to Complainant's meter, as of the meter reading on November 20, 1992. Tr. 120; Peoples Ex's. 2 & 4. That reduced usage purportedly continued until the diversion pipe was removed on March 15, 2001.

Tr. 120 & 146-148. Between November, 1992 and March, 2001, Complainant's usage never exceeded .105 MRD/DD during any annual period measured by Peoples, and was as low as .046 MRD/DD. Peoples Ex. 2, pp. 3-4.

Complainant might have rebutted the inference that the foregoing usage disparity was due to the diversion, but did not do so. Mr. Asim's oral testimony regarding his, and Complainant's, more frequent absences from the premises, Tr. 26, is valid evidence, even without supporting documents. However, he refers to a starting point in "mid-1993," which is subsequent to the 1992-93 heating season in which, Peoples has shown, gas usage had already decreased substantially. Mr. Sadowski believes that the replacement boiler he observed in 2002 was installed at the Premises in September 1999. Tr. 254. However, Complainant's usage remained virtually constant the following year and actually increased significantly in the year after that (in MRD/DD). Peoples Ex. 2, p. 4. Furthermore, the boiler replacement in September 1999 does not address the substantial reduction in metered gas between 1992 and the latter part of 1999.

Mr. Sadowski also mentions other purported energy-conserving measures purportedly taken at the Premises, including "insulation, new windows, new roof," for which he was ostensibly shown bills by Ms. Diehl and Mr. Asim. Tr. 262. However, the approximate dates for the installation of these conservation measures were not identified for the record, much less supported by receipts or other evidence. We note that Complainant attached to her Complaint an installment contract disclosure statement concerning window installation, which bears the date of March 13, 1982, ten years before Complainant's gas consumption diminished. It is, therefore, not "new" window installation and not associated with the change in metered gas at the Premises.

The Commission finds that Peoples' billing analysis shows that there was a considerable disparity between gas usage in the base period and the comparison period (November 1992 to March 2001). That is consistent with our finding that a diversion pipe was in place at the Premises on March 15, 2001. Complainant has not presented substantial proof for an alternative explanation for the fuel usage disparity.

That does not mean, however, that the usage disparities between the base period in 1988-89 and annual comparison periods from 1992 and 2001, as set forth in Peoples Ex. 4, represent an *exact* quantification of the diverted fuel during the latter period. The base period is a single heating season. No two heating seasons will produce identical usage, as demonstrated by the differences in annual consumption during the diversion period that begins in November 1992. Peoples Ex. 2. Therefore, the usage disparities demonstrated by Peoples represent, at most, an *approximate* quantification of the fuel diverted away from Complainant's meter between November 1992 and March 2001.

b.) physical experiment

Peoples' physical experiment to quantify diverted gas was conducted by Mr. Ulanday, Peoples' Manager of Technical Training and Services. Tr. 302. He is a

licensed engineer in the State of Illinois, with a Bachelors of Science degree in Thermo-Mechanical Engineering and a Masters degree in Mechanical Engineering. *Id*., 303-04. He states that thermo-mechanical engineering involves thermodynamics and fluid mechanics (the study of how liquids and gases move). *Id*., 304. He has worked for Peoples for 21 years in various engineering-related positions, including piping design for Peoples' distribution system. *Id*., 304-05. His present responsibilities include managing the training of Peoples' field personnel and managing the testing of materials and equipment. *Id*., 310.

Mr. Ulanday's experiment tested how much gas would have flowed through the diversion at the Premises. *Id*., 318. To set up the test, he consulted a photograph of the diversion (Peoples Ex. 1) and the description of Complainant's gas appliances at the Premises as of March 15, 2001 (from Complainant's Ex. 9), and assembled his test apparatus accordingly. *Id*., 318-20. He used a gas meter of the same make and model as Complainant's meter. *Id*., 321. In his opinion, the experiment reasonably duplicated the conditions and equipment at the Premises. *Id*., 323.

Mr. Ulanday measured the compressed air flow that entered the test apparatus under different flow conditions calibrated to match the various appliances at the premises. *Id*. 324-25. He explains that compressed air was used because it acts like natural gas in these circumstances and is safer to use. *Id*., 337. The air was flowed directly toward the meter, not toward the diversion. *Id*., 328. The amount of air that passed through the diversion was determined by subtracting the amount that went through the meter from the amount that entered the test. *Id*., 326.

The test showed that under higher gas loads (i.e., when more appliances were using gas), approximately 72 percent of the flow passed through the diversion, while at lower loads, all of the flow went through the diversion. *Id*., 326-27; Peoples Ex. 5. Mr. Ulanday states that, over time, between 75 and 80 percent of the flow would have passed through the diversion (because there would have been a mix of low flow and high flow circumstances during the diversion period). Tr. 340-41. Mr. Ulanday acknowledges that the test results would have been more accurate if the test had been conducted at the Premises, but avers that the difference in accuracy would have been within five percent. *Id*., 368.

Peoples contends that the results of the foregoing experiment are very consistent with the results of Peoples' above-described comparison of Complainant's gas bills during the base period and diversion period. According to Peoples, if Mr. Ulanday is correct that 80 percent of the gas piped to the Premises would have gone through the diversion over time, then, based on the amount of gas actually metered and billed to Complainant over the diversion period (5,710 MRDs, Peoples Ex. 3, p. 1), the Complainant *should have* been billed for 28,550 MRDs (diverted gas plus metered gas). Similarly, per Peoples' billing comparison for the base and diversion periods, Complainant *should have* been billed for 29,825 MRDs. Peoples Ex. 3, p.1. Therefore,

Peoples concludes, the decline in billed gas usage established by Complainant's usage history "closely matches" the decline in billed usage indicated by Mr. Ulanday's experiment. Peoples Init. Brief at 17-18.

Complainant challenges Mr. Ulanday and his experiment on several grounds. First, Complainant emphasizes that Mr. Ulanday is not a licensed contractor or plumber and has not installed piping. Complainant's Init. Brief at 12-13. However, Mr. Ulanday testifies about the movement of liquids and gases, not the sufficiency of piping installation.

Second, Complainant stresses that Mr. Ulanday did not visit the Premises or conduct his experiment there. *Id*., 12. The Commission does not find that he needed to do either of these things. Mr. Ulanday has both the training and experience to replicate the Premises' salient conditions in an experimental setting. Furthermore, to conduct an experiment at the Premises would have required re-installation of the unlawful diversion pipe, installation of an additional meter to measure the total flow into the Premises, Tr. 367, and an assertion of control and responsibility over Complainant's household appliances. We would not order such extraordinary actions (and Complainant may not have allowed them) when a satisfactory replication would, as here, suffice.

Third, and more substantively, Complainant argues that Mr. Ulanday failed to accurately replicate the salient conditions at the Premises. *Id*. Specifically, she charges that he did not use piping of equivalent length, diameter or direction. *Id*., 12-13. Mr. Ulanday's explanations, Tr. 362, 365-68, 379, 386-88, persuade us that the differences Complainant identifies do not invalidate Mr. Ulanday's experiment. He explains that the length of pipe that delivers gas to the Premises from Peoples' main would not have appreciably affected the pressure of the gas flow at Complainant's meter, because Peoples' distribution mains apply a standard range of flow pressure (6 to 8 inches of water column[8]) to customer meters. *Id*., 387. His experiment used that standard pressure range. Peoples Ex. 5. Additionally, Complainant's own witness states that flow pressure remains constant when gas moves from a larger to a smaller pipe, Tr. 278, thus reducing the importance of pipe diameter.

Nonetheless, while the Commission finds that Mr. Ulanday's experiment does generally replicate the salient conditions at the Premises, there is an attribute of the experiment that, in light of principles relied upon Mr. Ulanday, casts some doubt on the accuracy of the experiment's results. Specifically, because Mr. Ulanday states that a longer pipe imposes greater resistance than a shorter pipe, Tr. 327, we are concerned that the length of pipe between the diversion point and the meter in Mr. Ulanday's experiment is too long and, for that reason, overstates the resistance along that path. As depicted in Peoples Ex. 5, p. 2, that pipe length is notably longer than the pipe length between the diversion point and the meter depicted in the photographs of the Premises. Peoples Ex. 1; Complainant's Ex. 16. Moreover, that pipe travels straight up after passing the diversion point in the experiment, while the actual pipe at the Premises moves horizontally (before, like the Premises piping, turning downward). Therefore,

[8] Tr. 369. Seven inches of water column represents about a quarter-pound of pressure. *Id*., 386.

while we accept Mr. Ulanday's conclusion that the path of *greater* resistance at the Premises was through Complainant's meter, we also find, based on the principle Mr. Ulanday cites in support of that conclusion, that the design of the experiment exaggerates the greater resistance by some degree.

To quantify that exaggeration, the Commission refers to Peoples Ex. 6, p. 2, where Mr. Ulanday measured the pressure drop between a point preceding the meter (and the diversion) and a point beyond the meter. The pressure drop is .6 inches (measured in water column) with appliances engaged. Since Mr. Ulanday states that the meter itself would exert a half-inch of resistance, Tr. 328, we assume that the remaining .1-inch is attributable to pipe length. When we remove that amount of resistance from the path to the meter, we find that approximately 2 percent more fuel (.1/6.0 (rounded off)) would have flowed through the meter rather than the diversion pipe.

Fourth, Complainant underscores the differences in methodology and result between Mr. Ulanday and Mr. Sadowski, Complainant's witness. Mr. Sadowski, a licensed plumber, has seen 12 to 14 gas diversions during his 40 years of experience in plumbing, hearing and gas piping. *Id*., 232. He has an Illinois EPA license, various other professional licenses and memberships, and is the owner of a plumbing and heating business. *Id*., 230-32. He states that only licensed plumbers are permitted to install gas piping in Illinois. *Id*., 233-34. He visited the Premises twice in preparation for this proceeding, *id*., 271, and prepared a written summary, with diagrams and photograph, of his observations. Complainant's Ex. 16 (partial).

Mr. Sadowski states that natural gas follows a straight line and the path of least resistance, unless impeded. Tr. 265-66. At the Premises, he maintains, the straightest line and path of least resistance would be through Complainant's meter, so that the majority of gas would not go through diversion pipe, which veered away from the straight flow to the meter. *Id*., 266-67. He acknowledges that some quantity of gas would also has passed through the diversion pipe, *id*., 267, which he alternately estimates at 40 percent, *id*., 289, and 25 percent, of the flow entering the premises. Tr. 297.

As the Commission views them, Mr. Sadowski's quantifications are rough estimates, based on the general principles he has learned and applied during his years of practical experience. He recognizes that he is not presenting "exact science," Tr. 297, and that "you'd have to have a flow meter there to actually see what went through the bypass." *Id*. Of course, neither Mr. Sadowski or Mr. Ulanday had a flow meter at the Premises during the diversion period. However, Mr. Ulanday's experiment did, for the most part, replicate prevailing conditions at the Premises, and the Commission finds that the experiment is more likely to accurately quantify the relative flows of metered and unmetered gas than Mr. Sadowski's rough estimates.

Furthermore, despite their differing estimates of the percentage of gas flowing through, respectively, the meter and the diversion pipe, Mr. Ulanday, like Mr. Sadowski,

relies on the principle that gas will take the path of least resistance through piping. *Id*., 327. However, in his judgment, the diversion pipe would have been the path of least resistance for gas entering the Premises, because the path to that pipe was shorter than the path to the meter, and because the meter itself applies resistance to the gas flowing into it. *Id*., 327. This is not necessarily at odds with Mr. Sadowski's view that gas takes a straight path unless impeded, because the resistance Mr. Ulanday describes is a form of impedance.

Because Peoples bears the burden of proof here, we will begin with Mr. Ulanday's lowest estimate of diverted fuel during the diversion period – 75 percent of the gas entering the Premises. Then, since Mr. Ulanday acknowledges that measurements conducted at the actual Premises could have yielded flow results that differed from his experiment by as much as 5 percent, we will deduct that amount from his results. Additionally, we will deduct another two percent, reflecting our concern about the pipe length in Mr. Ulanday's experiment. We then find that Mr. Ulanday's experiment demonstrates that the remaining 68 percent of the fuel entering the Premises was diverted away from Complainant's meter during the diversion period.

2. Duration of diversion

As discussed previously, Peoples' bills for unmetered fuel are based on the assumption that gas diversion began in November 1992 and continued until March 2001, when the diversion pipe was removed. That assumption was derived from a review of Complainant's fuel consumption history, which purportedly demonstrates a "dramatic drop-off" in metered usage from November 1992 forward. However, because Peoples compares that usage to a base period that ends over three years earlier (November 1988 – September 1989)[9], the billing comparison cannot, by itself, establish that the drop-off was "dramatic" in an immediate sense, since usage could have declined gradually over the intervening three years. Indeed, as Peoples acknowledges, its billing comparison permits the inference that the drop-off (whether immediate or gradual) could have occurred at any time between September 1989 and November 1992[10]. Tr. 148.

Nonetheless, there is record evidence suggesting that the diversion pipe was not in place at the Premises before November 1992. On November 18, 1992, Peoples replaced the main gas line running (over a 48-foot distance) through the Premises to the wall at which the meter is stationed. Complainant's Ex. 6; Tr. 38. The Commission

[9] Peoples apparently uses a three-year old base period because it usually estimated Complainant's usage and did not have enough actual meter readings to establish a base period closer to the usage drop-off it identifies. Peoples Ex. 4. In the 1989-90 heating season, for example, all of Complainant's bills were based on estimated usage. *Id*., p. 7. Since estimates are based on the historic usage patterns in Peoples' data base, Tr. 144-5 & 148, they cannot capture changes in actual usage. Thus, estimates would not reflect the effect of a diversion around a customer's meter.

[10] Peoples correctly notes, however, that it is not billing for any gas that may have been diverted before November, 1992. Tr. 148.

finds it unlikely that Peoples' personnel could have performed that piping project, which terminates immediately next to the diversion pipe, without observing that pipe. Therefore, because completion of the piping project coincides with the decline in fuel consumption at the Premises, we conclude that the diversion began on or about November 20, 2002.

Thereafter, Peoples' personnel visited the Premises on other occasions, during which, Complainant contends, the diversion pipe would have been observed if it had been in place. Those visits include meter readings on May 26, 1994, *id*., 252, and January 17, 1998. *Id*., 254. Also, in late December 2000, Peoples' personnel placed a device on the front of Complainant's meter to transmit meter readings to Peoples' vehicles traversing the alley behind the Premises. *Id*. 276; Complainant's Ex. 2.

An evidentiary conflict is thus created. On the one hand, we have Peoples personnel directly viewing the meter during the purported diversion period, but reporting no diversion pipe. On the other hand, we have a consistent record of reduced fuel consumption throughout that period. We also have Mr. Alday's testimony that the diversion pipe he viewed at the Premises was rusted and apparently in place for a considerable period of time. Tr. 81 & 195-196. The Commission concludes that affirmative evidence of what *did* happen (Complainant's reduced consumption and Mr. Alday's description and photograph of what he saw) is more probative than deductions derived from what *did not* happen (no prior report of the pipe during the earlier visits to the Premises described above). The latter casts doubt upon, but does not outweigh, the former[11].

Accordingly, the Commission finds that the diversion period extended from November 20, 1992 to March 15, 2001, when the diversion pipe was removed.

3. Calculation of charges for unmetered gas

Peoples calculated the rates of metered fuel consumption at the Premises (measured in MRD/DD[12] for heating usage, and in MRD/day for non-heating use) during the pre-diversion base period (November 1988 to September 1999). It then multiplied those rates of metered consumption by the total number of degree days (for heat usage) and days (for non-heating use) during the fuel diversion period (November 1992 – March, 2001). The result ostensibly represents the amount of fuel that would have passed through Complainant's meter if there had been no diversion during that period. After subtracting out the usage for which Complainant had already been billed during the diversion period (i.e., the fuel that did pass through the meter during that time), Peoples converted the remainder into British Thermal Units ("therms" or "BTUs") and multiplied those therms by an average of Peoples' tariffed per-therm charges in effect

[11] As we observed above, Complainant's witness, Mr. Sadowski, describes the piping above Complainant's meter as "scrambled." Tr. 285. We can speculate – but not find - that a meter reader would not necessarily notice the diversion under those circumstances.

[12] Peoples obtained degree-day information for its calculations from the National Weather Service weather station at O'Hare Airport. Tr. 126.

during the diversion period. Tr. 122-25 & 136–137. Applicable taxes were calculated and added to that result, *id*., 125, yielding a total diversion-related bill of $13,917.11. *Id*.; Peoples Ex. 3. This is the amount Peoples presently seeks to collect and, correspondingly, the amount Complainant wants removed from her bill by order of this Commission.

Although Complainant does not challenge the foregoing methodology for calculating what Complainant would have been charged for unmetered gas during the diversion period, that methodology must nevertheless be is reasonable. Peoples' calculations assume an exact equivalence in Complainant's rates of fuel consumption (in MRD/DD) during, respectively, the base and diversion periods. However, as we observed above, it is highly unlikely that a customer's annual usage rate will be identical in any two years, much less over nine years. Additionally, Peoples provides only a one-year base period for comparison. That year's consumption rate may be significantly above or below Complainant's annual average or median fuel consumption rate. Still, since our regulations require reasonableness, not exactitude, these limitations do not necessarily invalidate Peoples' methodology. Indeed, in other cases, a gas provider may have even less precise information to work with, yet still demonstrate the reasonableness of its billing estimates[13]. Thus, the totality of salient circumstances will determine reasonableness in each case.

In this instance, Peoples avers that it selected above-described base period because it was the closest time period prior to the diversion for which it had actual meter readings. Tr. 119-20 & 134. The Commission believes that was a reasonable choice. Monthly usage during the intervening time between the base and diversion periods was almost entirely estimated, which would have minimized its usefulness and probative value. Also, that estimated usage would have, itself, been based on the results of the actual meter readings included in Peoples' base period.

With regard to Peoples' assumptions that the rate of usage during the diversion period would have equaled the usage rate of the base period, and that the usage rate would have been constant over the several years of the diversion period, we conclude that no better – and, therefore, more reasonable - assumptions were available. To estimate what is ultimately unknowable (unmetered usage), Peoples had no choice but to refer to what is knowable (prior metered usage). Further, by using a degree-day analysis, Peoples appropriately accounted for weather differences that would have affected Complainant's usage. The burden then shifted to Complainant to present evidence showing why her rate of fuel consumption during the diversion period would have materially differed from the usage rate during the base period. The minimal evidence Complainant provided was, for reasons discussed above, inadequate.

[13] For example, if a customer with no prior consumption history were to benefit from tampering with a gas provider's equipment, it would be unfair to preclude recovery of lost revenue solely because of the absence of a precise usage history. The provider would be allowed to rely on a reasonable method for calculating it damages.

However, Peoples argues that results of its foregoing methodology are "corroborated" by the results of Mr. Ulanday's previously described physical experiment. Peoples Init. Brief at 20. "[T]he calculation of the number of MRDs of gas that should have been billed over the diversion period based on the degree-day analysis yielded a number that was strikingly close to the number that was produced using Mr. Ulanday's prediction (based on the experiment) about the amount of gas that would have gone through the diversion at the Premises over time." *Id*.

Peoples is selectively linking the results of its degree-day analysis to the *highest* estimate of diverted gas derived from Mr. Ulanday's experiment (80% of the fuel entering the Premises). Mr. Ulanday in fact provided an estimated *range* of diverted gas (75%-80% of fuel to the Premises), which he conceded would vary by 5% had he performed his experiment at the Premises. As we indicated earlier, that concession would be construed against Peoples, lowering his estimate to a range of 70%-75%, which we further construed against Peoples by selecting the lower end of that revised estimate (70%). Then, we additionally reduced Mr. Ulanday's estimate of diverted gas by 2 percent, to reflect the greater pipe resistance in the path to the meter in his experiment (as compared to the pipe resistance at the Premises). Consequently, since Peoples believes that its two methods for estimating diverted fuel are mutually corroborative, the Commission concludes that the calculation of a reasonable bill here should be based on our finding that 68% of the gas entering the Premises during the diversion period passed through the diversion pipe and was unmetered.

Conceptually, this is equivalent to either reducing Complainant's rate of fuel consumption during the diversion period or finding that the consumption rate during the base period was greater than normal. In effect, by linking its degree analysis to the results of Mr. Ulanday's experiment, Peoples has provided empirical evidence that reduces the applicability of certain assumptions underlying the degree-day analysis (i.e., that the base period represents Complainant's normal rate of fuel consumption, and that that rate of consumption continued, and remained constant, during the diversion period).

Based on the foregoing findings, the Commission calculates the benefit to Complainant from unmetered gas in the following manner. First, since the 5710 MRDs for which Complainant was billed during the diversion period equal 32 percent of the total flow to the Premises, 100 percent of that flow would have been 17,844 MRDs. Second, we subtract the 5710 MRDs already billed, leaving a remainder of 12,134 unbilled MRDs. Third, we multiply those MRDs by the BTU factor (1.028) set forth at Peoples Ex. 3, p. 1, yielding 12, 474 unbilled therms. Fourth, we multiply that yield by Peoples' average effective rate ($0.4966575/therm) during the diversion period. *Id*. The result is a pre-tax bill of $6195.31. Fifth, we apply the gross revenue tax (.001 x $6195.31 = $6.20), the tax per therm (.024 x 12,474 = $299.38) and the municipal tax (.0824 x $6195.31 = $510.49), *id*., and we add the results to the pre-tax bill ($6195.31 + $6.20 + $299.38 + $510.49). The amount reasonably due to Peoples from Complainant is $7011.38.

III. CONCLUSION

Peoples has established by the preponderance of the evidence that: (1) tampering occurred at the Premises through installation of a diversion during the period from November 20, 1992 to March 15, 2001; (2) Complainant benefited from the tampering by consuming unmetered gas during that period; and (3) the reasonable bill for the unmetered gas consumed by Complainant, as proven by Peoples' estimation methodologies and other evidence, is $7011,38. To the extent that Complainant seeks to be relieved of the obligation to pay that amount, the Complaint should be denied. However, to the extent the Complainant seeks to be relieved of the obligation to pay anything in excess of that amount, the Complaint should be granted.

IV. FINDINGS AND ORDERING PARAGRAPHS

The Commission, having given due consideration to the entire record herein and being fully advised in the premises, is of the opinion and finds that:

(1) Respondent, The Peoples Gas Light and Coke Company, is an Illinois Corporation engaged in furnishing natural gas service in the State of Illinois and, as such, is a public utility within the meaning of the Illinois Public Utilities Act;

(2) at all times material to this proceeding, Complainant was a natural gas customer of The Peoples Gas Light and Coke Company and received natural gas from The Peoples Gas Light and Coke Company;

(3) the Commission has jurisdiction over the parties and the subject matter herein;

(4) the factual findings and conclusions set forth in the prefatory portion of this Order conform to the evidence of record and are hereby adopted as findings of fact;

(5) The Peoples Gas Light and Coke Company has proven by a preponderance of the record evidence that tampering, in the form of a diversion of fuel away from Complainant's gas meter, occurred at the above-described Premises between November 20, 1992 and March 15, 2001;

(6) The Peoples Gas Light and Coke Company has proven by a preponderance of the record evidence that Complainant benefited from the tampering described in Finding (4), above;

(7) The Peoples Gas Light and Coke Company has proven by a preponderance of the record evidence that the reasonable bill for the natural gas the benefited Complainant as a result of tampering was

$7,011.38; The Peoples Gas Light and Coke Company has not proven by a preponderance of the record evidence that any amount in excess of $7,011.38 can be reasonably billed to Complainant;

(8) any objections, motions or petitions filed in this proceeding which remain undisposed of should be disposed of in a manner consistent with the ultimate conclusions contained in this Order.

IT IS THEREFORE ORDERED that the Complaint filed by Virginia W. Diehl on June 14, 2001 against The Peoples Gas Light and Coke Company be, and is hereby, granted in part and denied in part.

IT IS FURTHER ORDERED that the Complainant, Virginia W. Diehl, be, and is hereby, responsible for all unmetered fuel received at the above-described Premises between November 20, 1992 and March 15, 2001, and may be billed by The Peoples Gas Light and Coke Company in an amount up to and including $7011.95 for such unmetered fuel.

IT IS FURTHER ORDERED that The Peoples Gas Light and Coke Company be, and is hereby, prohibited from collecting any amount in excess of $7,011.95 for unmetered gas consumed at Complainant's Premises during the period beginning on November 20, 1992 and ending on March 15, 2001.

IT IS FURTHER ORDERED that any objections, motions or petitions not previously disposed of are hereby disposed of consistent with the findings of this Order.

IT IS FURTHER ORDERED that, subject to the provisions of Section 10-113 of the Public Utilities Act and 83 Ill.Adm.Code 200.880, this Order is final, and is not subject to the Administrative Review Act.

DATED: February 5, 2003
Simultaneous Briefs on Exceptions **February 19, 2003**
Simultaneous Reply Briefs on Exceptions **March 5, 2003**

David Gilbert,
Administrative Law Judge